Vehicle to grid system Indonesia

Can vehicle-to-grid (V2G) be used in Indonesian electrical grid?
Ancillary services of EVs have led to the idea to utilize EVs for supporting the grid, especially as the number of EVs is increasing. The feasibility of vehicle-to-grid (V2G) in Indonesian electrical grid is evaluated in this study. The load levelling and frequency regulation have been focusely observed.

Can EVs balance the grid in Indonesia?
For Indonesian case,the capability and capacity of the grid (including Jamali) to balance its supply and demand is very limited. Coordinated charging and ancillary services using EVs through vehicle-to-grid (V2G) become very crucial technology in the future in order to balance the grid,as well as creating a new market sector.

Can EVs provide ancillary service in Indonesian grid?
Therefore, in this study, the feasibility of EVs adoption to provide ancillary service in Indonesian grid is analyzed. First, the condition of Indonesian grid, especially in Java-Madura- Bali (Jamali) grid, is briefly analyzed in the context of possibility of EVs for load leveling.

What is the power grid in Indonesia?
As Indonesia is a very large country having approximately 17,000 islands,the power grid is divided into several local power grids. Among them,the JAMALI gridis the biggest power grid with approximately 70% of the total national capacity,owing to its larger population and higher economic activities as compared with other areas.

Does Indonesia have a grid balancing system?
As of today,Indonesia has no large-scale power storage,such as pumped hydroelectricity,which is able to balance the grid responsively. Therefore,grid balancing depends heavily on the marginal capacity and peaking power generators. Figure 2.

Should EV batteries be used for grid support?
Ancillary services of EVs have led to the idea of utilizing EV batteries for grid support, owing to their high-speed response to the fluctuating power system.

The participating opportunities in grid ancillary services have encouraged the idea to use the battery of EVs as a highly responsive power storage in the power system. The techno-economy of vehicle-to-grid (V2G) in Indonesia, especially in Java-Bali grid, is studied in this paper with several the feed-in-tariff schemes.

The number of EVs in Indonesia is predicted to rise in the near future, in a line with the global increasing of EVs adoption. The combination of EV adoption and renewable energy share is estimated to increase the popularity of the vehicle-to-grid (V2G) concept. V2G affects the possible synergetic gain for both vehicles

and grid.

Downloadable (with restrictions)! Electric vehicles (EVs) are believed as efficient solutions to reduce carbon emissions and fossil fuel reliance in transportation sectors. Yet, the ever-increasing penetration of EVs also poses great challenges for distribution grid planning and operation. As a research hotspot, the vehicle-to-grid (V2G) technology could not only relieve the adverse ...

THERE ARE 50 VEHICLE-TO-GRID PROJECTS GLOBALLY WITH PHYSICAL DEPLOYMENT OF CHARGERS, OF WHICH OVER HALF ARE IN EUROPE As electric vehicle (EV) penetration increases, Distribution System Operators (DSOs) face new challenges in operating their networks. But with challenge comes opportunity. Vehicle-to-grid (V2G)

Mit Vehicle to grid-Technologie ausgestattete Gleichstromladestation. Unter Vehicle to grid (V2G, zu Deutsch: Vom Fahrzeug zum Netz) versteht man ein Konzept zur Abgabe von elektrischem Strom aus den Antriebsakkus von Elektro-und Hybridautos zurück in das öffentliche Stromnetz.Im Unterschied zu reinen E-Autos können bidirektional ladefähige Fahrzeuge nicht nur elektrische ...

The substantial increment in EVs application also seriously affects power grids, especially the distribution grid [7]. Generally, the distribution grid is designed with a limited safety margin and overloading capacity, while the uncoordinated charging of large-scale EVs raised from random behavior of EV users would dramatically elevate load peaks of distribution grids during ...

This article serves as a case study examining the effects of EVs on Indonesia"s grid system to support the integration of renewable energy in the year 2050 toward net zero ...

The system consists of several key elements, including Power converters, which facilitate the conversion of electrical energy between the vehicle and the grid. Controllers regulate the flow of energy and communicate with the grid and vehicle systems. DC link bus voltage, which provides a stable voltage source for the system.

Vehicle-to-grid (V2G) systems play a key role in the integration of electric vehicles (EVs) into smart grids by enabling bidirectional energy flows between EVs and the grid. Optimizing V2G operations poses significant challenges due to the dynamic nature of energy demand, grid constraints, and user preferences. This paper addresses the optimization ...

The controllable charging a d discharging behavior of EVs h s led to the dea to utiliz EVs for supporting the grid. The feasibility of vehicle-to-grid (V2G) in Indonesian electrical grid is evaluated in this study. The evaluated ancillary services include load levelling and frequency regulation. Â© 2018 The Authors. Published by Elsevier Ltd.

With the rapid growth in the number of EVs, a huge number of EVs are connected to the power grid for charging, which places a great amount of pressure on the stable operation of the power grid. This paper

focuses on the development of V2G applications, based on the current research status of V2G technology. Firstly, the standards on V2G applications ...

In this study, a techno-economic analysis of the vehicle-to-grid (V2G) system in the JAMALI grid is conducted in terms of the changes in the feed-in tariff schemes, including regular, natural, and demand response tariffs. ...

In this study, a techno-economic analysis of the vehicle-to-grid (V2G) system in the JAMALI grid is conducted in terms of the changes in the feed-in tariff schemes, including regular, natural, and demand response tariffs. The results show that by utilizing EVs, the supply during peak hours can be reduced by up to 2.8% (for coal) and 8.8% (for gas).

This work aims at a comprehensive assessment of the impact of vehicle-to-grid (V2G) technology on both demand and supply sides, considering integrated resource planning for sustainable energy. By using a computational tool and evaluating the complete potentials, we divide the analysis into four dimensions: environmental, social, technical, economic, and ...

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These systems require high investments which are returned through the heat ... Potential ancillary services of electric vehicles (vehicle-to-grid) in Indonesia Muhammad Hudaa,b,, ...

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